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1 - Magnetic shield changes with time and temperature

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Magnetic shielding is a necessary component of electric dipole moment experiments and other precision measurements. Understanding the details of its behavior can improve the outcome of experiments. We have previously reported (AIP Advances **8**, 035303 [2018]) that delayed changes in magnetization cause the magnetic flux density inside a Permalloy (mu-metal) shielded volume to decrease over hours and days. To test if this effect changes with temperature, we are performing similar measurements on a warmed shield. In a magnetically nulled region, the shield, wrapped with heating tapes and insulation, is heated to about 45 $^{\circ}$ C. The heaters are then turned off, and the shield demagnetized by passing a 60 Hz current through a toroidal winding. After a short wait, an external magnetic field is applied and the magnetic flux density in the center of the shielded volume is monitored over the next few hours. Preliminary results will be presented.

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